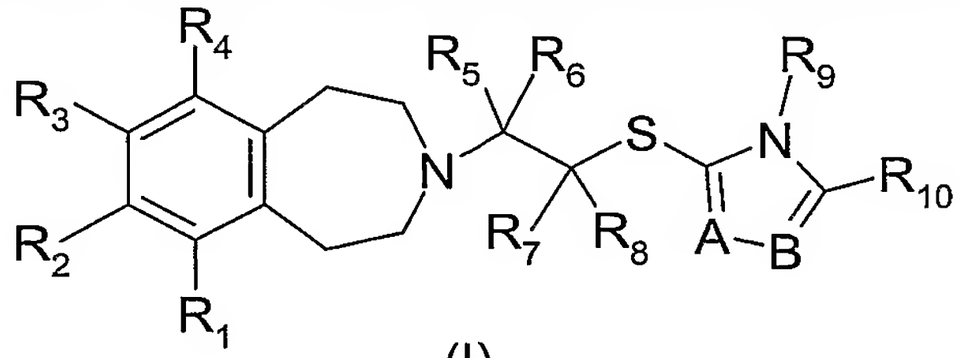
Claims

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:

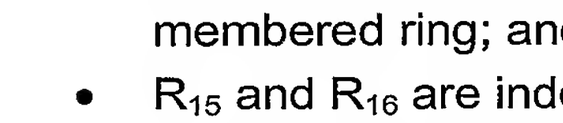


(I)

wherein

- R_1 and R_4 are independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, C_{1-2}alkyl, C_1alkoxy, haloC_{1-2}alkyl, haloC_1alkoxy, hydroxy, cyano and nitro;
- R_2 and R_3 are independently selected from the group consisting of: halogen, hydroxy, cyano, nitro, C_{1-4}alkyl, haloC_{1-4}alkyl, C_{3-6}cycloalkyl, C_{1-4}alkoxy, haloC_{1-4}alkoxy, C_{1-4}alkoxyC_{1-4}alkoxy, C_{1-4}alkylthio, C_{1-4}alkoxyC_{1-4}alkyl, C_{3-6}cycloalkylC_{1-4}alkoxy, C_{1-4}alkanoyl, C_{1-4}alkoxycarbonyl, C_{1-4}alkoxycarbonylC_{1-4}alkyl, C_{1-4}alkylsulfonyl, C_{1-4}alkylsulfonyloxy, haloC_{1-4}alkylsulfonyl, haloC_{1-4}alkylsulfonyloxy, C_{1-4}alkylsulfonylC_{1-4}alkyl, C_{1-4}alkylsulfonamido, C_{1-4}alkylsulfonamidoC_{1-4}alkyl, heterocyclyl, aryl, arylC_{1-4}alkoxy, aryloxy, arylthio, arylmethyl, aroyl, aryloxymethyl, arylsulfonyl, aryl-NR'- (wherein R' is hydrogen or C_{1-4}alkyl), arylsulfonyloxy, arylsulfonylC_{1-4}alkyl, arylsulfonamido, arylcarboxamido, arylsulfonamidoC_{1-4}alkyl, arylcarboxamidoC_{1-4}alkyl, aroylC_{1-4}alkyl, arylC_{1-4}alkanoyl, a group $R_{11}CON(R_{12})(CH_2)_r$, $R_{11}R_{12}NCO(CH_2)r$ or $R_{11}R_{12}NSO_2(CH_2)_r$ (in which r is 0, 1, 2, 3 or 4, and each of R_{11} and R_{12} is independently hydrogen or C_{1-4}alkyl, or in the groups $R_{11}CON(R_{12})(CH_2)_r$, $R_{11}R_{12}NCO(CH_2)_r$ and $R_{11}R_{12}NSO_2(CH_2)_r$, $R_{11}CONR_{12}$ or $R_{11}R_{12}N$ together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms (including the carbon atoms contained in any optional substituent(s) of the azacycle)); wherein in any group containing an aryl moiety, the aryl may be substituted by one, two or three groups selected from the group consisting of halogen, hydroxy, cyano, nitro, amino, C_{1-4}alkyl, haloC_{1-4}alkyl, C_{1-4}alkoxy, haloC_{1-4}alkoxy, C_{1-4}alkylenedioxy, C_{1-4}alkanoyl, C_{1-4}alkylsulfonyl, haloC_{1-4}alkylsulfonyl, C_{1-4}alkylamino, C_{1-4}dialkylamino, $R_{13}R_{14}NCO$ (in which R_{13} and R_{14} are independently hydrogen or C_{1-4}alkyl, or $R_{13}R_{14}N$ together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms (including the carbon atoms contained in any optional substituent(s) of the azacycle));
- A and B are independently N or CH;
- R_5, R_6, R_7, R_8 and R_9 are independently hydrogen or C_{1-4}alkyl;

- R_{10} is a group of the formula (a) or (b):



(a) (b)

wherein:

- Z is C_{1-4}alkyl, haloC_{1-4}alkyl, C_{3-6}cycloalkyl, phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, hydroxy, oxo, cyano, nitro, C_{1-4}alkyl, C_{1-4}alkoxy, haloC_{1-4}alkyl, haloC_{1-4}alkoxy, C_{1-4}alkylenedioxy, C_{1-4}alkanoyl, C_{1-4}alkylsulfonyl, C_{1-4}alkylsulfonyloxy, haloC_{1-4}alkylsulfonyl, haloC_{1-4}alkylsulfonyloxy, C_{1-4}alkylsulfinyl, C_{1-4}alkylthio, $R_{17}SO_2N(R_{18})$-, $R_{17}R_{18}NSO_2$-, $R_{17}R_{18}N$-, $R_{17}R_{18}NCO$-, $R_{17}CONR_{18}$- and a 5- or 6-membered heteroaromatic ring which is optionally substituted by one or two C_{1-2}alkyl, haloC_{1-2}alkyl or $R_{17}R_{18}N$- (wherein R_{17} and R_{18} are independently hydrogen or C_{1-4}alkyl, or R_{17} and R_{18} together form C_{3-6}alkylene); and wherein substituents positioned *ortho* to one another may be linked to form a 5- or 6-membered ring; and
- R_{15} and R_{16} are independently hydrogen or C_{1-4}alkyl and t is 1, 2, 3 or 4, or -$(CR_{15}R_{16})$t- forms a C_{3-6}cycloalkylene linker.

2. A compound as claimed in claim 1, wherein R_3 is hydrogen.

3. A compound as claimed in claim 1 or claim 2, wherein R_2 is C_{1-4}alkyl, haloC_{1-4}alkyl, halogen, C_{1-4}alkylsulfonyl (e.g. methylsulfonyl or ethylsulfonyl), haloC_{1-4}alkylsulfonyl (e.g. trifluoromethylsulfonyl), C_{1-4}alkylsulfonyloxy (e.g. methylsulfonyloxy), haloC_{1-4}alkylsulfonyloxy (e.g. trifluoromethylsulfonyloxy), $R_{11}R_{12}NSO_2$ (where each of R_{11} and R_{12} is independently hydrogen or C_{1-4}alkyl or $R_{11}R_{12}N$ together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms, e.g. a piperidin-1-ylsulfonyl, pyrrolidin-1-ylsulfonyl or 1,4-morpholin-4-ylsulfonyl), a 5- or 6-membered heteroaromatic or a heterocyclyl, each of which is optionally substituted by one or two substituents selected from: halogen, cyano, C_{1-2}alkyl (e.g. methyl or trifluoromethyl), C_{1-2}alkoxy (e.g. methoxy), C_{1-2}alkylenedioxy (e.g. methylenedioxy), C_{1-3}alkanoyl (e.g. acetyl), C_2alkanoylamino (e.g.acetylamino), haloC_1alkylsulfonyl (e.g. trifluoromethylsulfonyl) and methylsulfonyl.

4. A compound as claimed in claim 3, wherein R_2 is bromo, cyano, hydroxy, chloro, methoxy, tert-butyl, methylsulfonyl, ethylsulfonyl, N,N-dimethylaminosulfonyl, pyrrolidin-1-ylsulfonyl, 1,4-morpholin-4-ylsulfonyl, methylsulfonyloxy, pyrazolyl (eg pyrazol-5-yl), 1,3-dimethyl-pyrazol-5-yl, pyrazin-2-yl, 5-methyl-oxazol-2-yl or 5-methyl-isoxazol-3-yl.

5. A compound as claimed in any of claims 1-4 wherein both R_1 and R_4 are hydrogen.

6. A compound as claimed in any of claims 1-5, wherein A and B are both nitrogen.

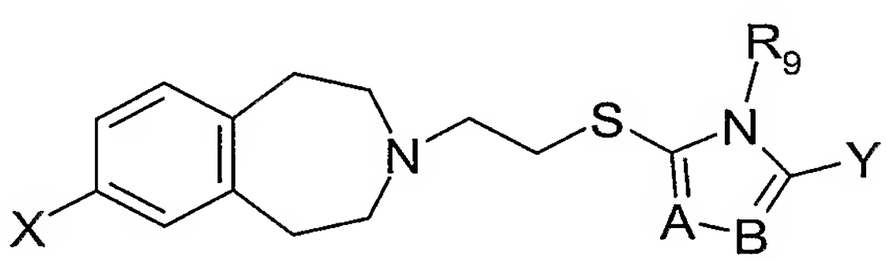
7. A compound as claimed in any of claims 1-6 wherein R_5, R_6, R_7 and R_8 are all hydrogen.

8. A compound as claimed in any of claims 1-7, wherein R_9 is methyl.

9. A compound as claimed in any of claims 1-8, wherein R_{10} is a group of formula (a).

10. A compound as claimed in claim 9, wherein in formula (a), Z is phenyl, fluorophenyl, or quinolinyl, each of which is unsubstituted or substituted by one or more substituents selected from: halogen, or cyano, C_{1-2}alkyl (e.g. methyl), haloC_{1-2}alkyl (e.g. trifluoromethyl), C_{1-2}alkoxy (e.g. methoxy), haloC_{1-4}alkoxy (e.g. trifluoromethoxy), C_{1-2}alkylenedioxy (e.g. methylenedioxy), C_{2-3}alkanoyl (e.g. acetyl), C_2alkanoylamino (e.g.acetylamino), methylsulfonyl, haloC_1alkylsulfonyl (e.g. trifluoromethylsulfonyl), C_1alkylsulfonyloxy (e.g. methylsulfonyloxy), C_1alkylaminosulfonyl (e.g. methylaminosulfonyl), C_1alkylsulfonylamino (e.g. methylsulfonylamino) and C_1alkylaminocarbonyl (e.g. methylaminocarbonyl).

11. A compound as claimed in claim 1 having a formula (IA) or a pharmaceutically acceptable salt thereof:

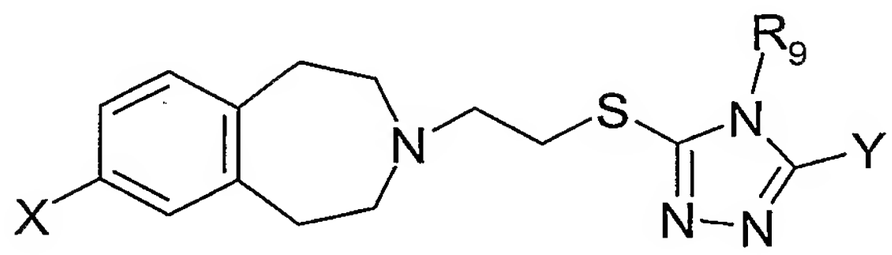


(IA)

wherein:

- A, B and R_9 are as defined in claim 1;
- X is a 5- or 6-membered heteroaromatic ring optionally substituted by 1, 2 or 3 substituents selected from the group consisting of: halogen, cyano, C_{1-2}alkyl, fluoroC_{1-2}alkyl, C_{1-2}alkoxy, C_{1-3}alkanoyl, C_2alkanoylamino, fluoroC_1alkylsulfonyl and methylsulfonyl; and
- Y is phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, cyano, C_{1-2}alkyl, haloC_{1-2}alkyl, C_{1-2}alkoxy, haloC_{1-2}alkoxy, C_{1-2}alkylenedioxy, C_{2-3}alkanoyl, C_2alkanoylamino, methylsulfonyl, haloC_1alkylsulfonyl, methylsulfonyloxy, methylaminosulfonyl, methylsulfonylamino and methylaminocarbonyl.

12. A compound as claimed in claim 1 having a formula (IB) or a pharmaceutically acceptable salt thereof:



(IB)

wherein

- X is isoxazolyl or pyrazolyl ring optionally substituted by 1, 2 or 3 substituents selected from the group consisting of: halogen, cyano, C_{1-2}alkyl, fluoroC_{1-2}alkyl, C_{1-2}alkoxy, C_{1-3}alkanoyl, C_2alkanoylamino, fluoroC_1alkylsulfonyl and methylsulfonyl; and
- Y is phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, cyano, C_{1-2}alkyl, haloC_{1-2}alkyl, C_{1-2}alkoxy, haloC_{1-2}alkoxy, C_{1-2}alkylenedioxy, C_{2-3}alkanoyl, C_2alkanoylamino, methylsulfonyl, haloC_1alkylsulfonyl, methylsulfonyloxy, methylaminosulfonyl, methylsulfonylamino and methylaminocarbonyl.

13. A compound as claimed in claim 1, which is:

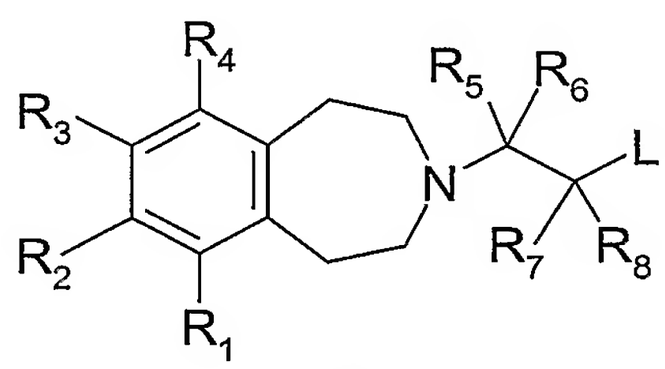
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-1,3-oxazol-5yl)-4H-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(tetrahydro-2H-pyran-4-yl)-4H-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(2-methyl-5-quinolinyl)-4H-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(2-methyl-6-quinolinyl)-4H-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(1,3-Dimethyl-1*H*-pyrazol-5-yl)-3-(2-{[4-methyl-5-(2-methyl-5-quinolinyl)-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine
- 7-(1,3-Dimethyl-1*H*-pyrazol-5-yl)-3-(2-{[4-methyl-5-(5-methyl-2-pyrazinyl)-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine
- 3-(2-{[5-(3,4-Difluorophenyl)-4-methyl-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-7-(1,3-dimethyl-1*H*-pyrazol-5-yl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(2-methyl-3-pyridinyl)-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(4-pyridazinyl)-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate

- 7-(5-Methyl-3-isoxazolyl)-3-[2-({4-methyl-5-[2-methyl-6-(trifluoromethyl)-3-pyridinyl]-4*H*-1,2,4-triazol-3-yl}thio)ethyl]-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 3-(2-{[5-(1,5-Dimethyl-1*H*-pyrazol-4-yl)-4-methyl-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 3-(2-{[5-(5-Chloro-1-methyl-1*H*-pyrazol-4-yl)-4-methyl-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 7-(5-Methyl-3-isoxazolyl)-3-[2-({4-methyl-5-[4-(trifluoromethyl)phenyl]-4*H*-1,2,4-triazol-3-yl}thio)ethyl]-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 3-(2-{[5-(3,4-Difluorophenyl)-4-methyl-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 7-(5-Methyl-3-isoxazolyl)-3-(2-{[4-methyl-5-(5-methyl-2-pyrazinyl)-4*H*-1,2,4-triazol-3-yl]thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- 3-(2-{[1-(1-Methylethyl)-5-(methylsulfonyl)-1*H*-benzimidazol-2-yl]thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate

or a pharmaceutically acceptable salt thereof.

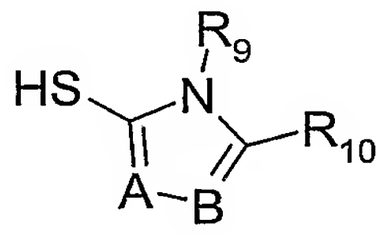
14. A process for preparing a compound as defined in claim 1, which process comprises:

(a) reacting a compound of formula (II):



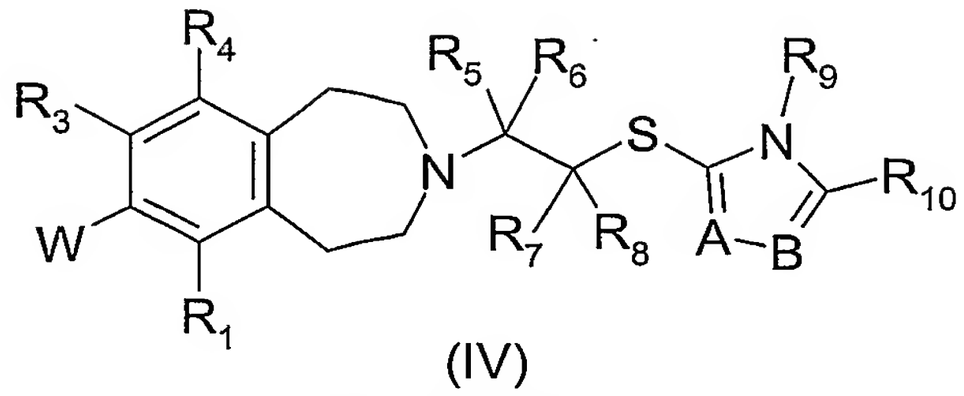
(II)

wherein R_1 to R_8 are as defined for formula (I) and L is a leaving group; with a compound of formula (III):



(III)

wherein A, B, R_9 and R_{10} are as defined for formula (I); or

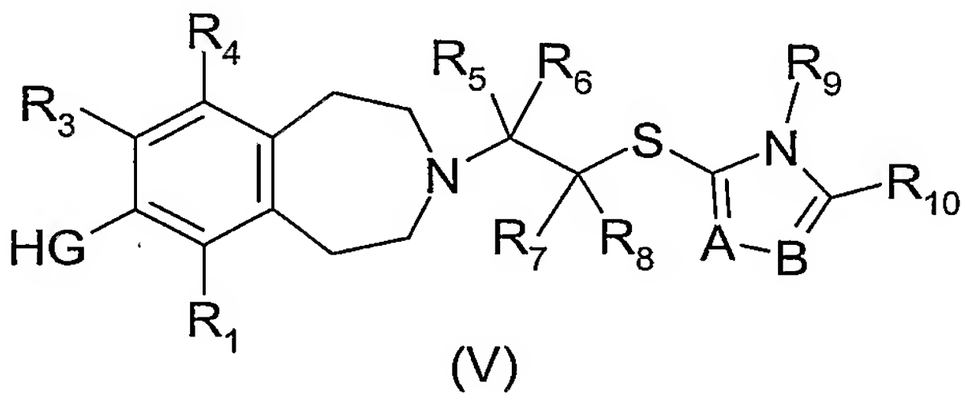


(IV)

(b) for a compound of formula (I) wherein R_2 is aryl, reacting a compound of formula (IV):

wherein R_1, R_3 to R_{10}, A and B are as defined for formula (I) and W is halogen or a trifluoromethylsulfonyloxy group, or W is a group M selected from a boron derivative (e.g. a boronic acid function $B(OH)_2$) or a metal function such as trialkylstannyl (e.g. $SnBu_3$), zinc halide or magnesium halide; with a compound aryl-W^1, wherein aryl is as defined for formula (I), W^1 is halogen or a trifluoromethylsulfonyloxy group when W is a group M or W^1 is a group M as defined above when W is halogen or a trifluoromethylsulfonyloxy group; or

(c) for a compound of formula (I) wherein R_2 is aryloxy or arylthio, reacting a compound of formula (V):



(V)

wherein G is oxygen or sulfur, and R_1, R_3 to R_{10}, A and B are as defined for formula (I); with a reagent serving to introduce the aryl group;

and optionally thereafter for any of the steps (a), (b) or (c):

- removing any protecting group(s); and/or
- forming a salt; and/or
- converting one compound of formula (I) to a different compound of formula (I).

15. A method of treating a condition for which modulation of dopamine D_3 receptors is beneficial, which comprises administering to a mammal (e.g. human) in need thereof an effective amount of a compound of a compound of any of claims 1-13.

16. A method as claimed in claim 15, wherein the condition is substance abuse and/or drug dependency.

17. A method as claimed in claim 16, wherein the condition is craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

18. Use of a compound as claimed in any of claims 1-13 in the manufacture of a medicament for the treatment of a condition in a mammal for which modulation of dopamine D3 receptors is beneficial.

19. Use as claimed in claim 18, wherein the condition is substance abuse and/or drug dependency.

20. Use as claimed in claim 19, wherein the condition is craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

21. A compound as claimed in any of claims 1-13 for use in therapy.

22. A compound as claimed in any of claims 1-13 for use in the treatment of a condition in a mammal for which modulation of dopamine D3 receptors is beneficial.

23. A compound as claimed in any of claims 1-13 for use in the treatment of substance abuse and/or drug dependency.

24. A compound as claimed in any of claims 1-13 for use in the treatment of craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

25. A pharmaceutical composition comprising a compound as claimed in any of claims 1-13 and a pharmaceutically acceptable carrier.